

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
4 September 2003 (04.09.2003)

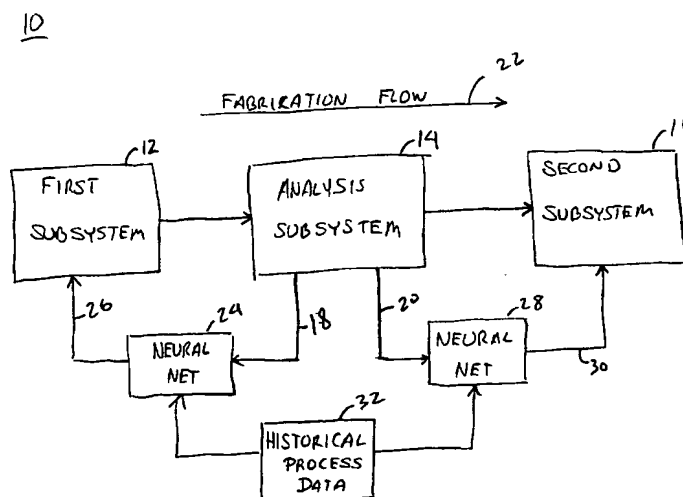
PCT

(10) International Publication Number
WO 03/073448 A2

- (51) International Patent Classification⁷: **H01G** (74) Agents: **BEUSSE, James, H.** et al.; Beusse Brownlee Bowdoin & Wolter, P.A., 390 N. Orange Avenue, Suite 2500, Orlando, FL 32801 (US).
- (21) International Application Number: PCT/US03/05251
- (22) International Filing Date: 24 February 2003 (24.02.2003) (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 22 Aug 04
60/359,222 22 February 2002 (22.02.2002) US
- (71) Applicant (*for all designated States except US*): **AGERE SYSTEMS, INC.** [US/US]; 555 Union Boulevard, Allentown, PA 18109 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **HOUGE, Erik, C.** [US/US]; 6237 Bent Pine Drive, Orlando, FL 32822 (US). **McINTOSH, John, Martin** [US/US]; 7431 Sugar Bend Drive, Orlando, FL 32819 (US). **JONES, Robert, Francis** [US/US]; 11613 Osprey Pointe Boulevard, Clermont, FL 34711-7672 (US).
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: MONITORING AND CONTROL OF A FABRICATION PROCESS



(57) Abstract: A system (10) for monitoring and controlling a fabrication process includes at least a first subsystem (12), a crystallographic analysis subsystem (14), and a second subsystem (16), wherein the first subsystem and second subsystem perform respective fabrication steps on a workpiece. The crystallographic analysis subsystem may be coupled to both the first subsystem and second subsystem. The analysis subsystem acquires crystallographic information from the workpiece after the workpiece undergoes a fabrication step by the first subsystem and then provides information, based on the crystallographic information acquired, for modifying parameters associated with the respective fabrication steps. The system may also include neural networks (24, 28) to adaptively modify, based on historical process data (32), parameters provided to the respective fabrication steps. The analysis subsystem may include a electromagnetic source (61), a detector (66), a processor (67), a controller (68) and a scanning actuator (65).

WO 03/073448 A2